Calendar No. 830

98TH CONGRESS
2d Session
SENATE
REPORT
98–423

NATIONAL BUREAU OF STANDARDS AUTHORIZATION

MAY 2 (legislative day, APRIL 30), 1984.—Ordered to be printed

Mr. PACKWOOD, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany S. 2458]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 2458) to authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal year 1985, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill as reported is to authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards (NBS), including certain special statutory programs, and to assist NBS in carrying out its responsibilities under the NBS Organic Act of 1901. The bill as reported authorizes appropriations of $131,600,000 for fiscal year 1985 for the NBS, and $3,371,000 for fiscal year 1985 for the Office of Productivity, Technology, and Innovation.

BACKGROUND AND NEEDS

NBS, the Nation's oldest national laboratory, was established by Congress in 1901. The NBS Organic Act of 1901 (Public Law 56–177), as amended in 1950, sets forth the primary NBS mission, which is to develop national standards of measurement for use in scientific research, engineering, manufacturing and commerce. These standards provide the basis for the exchange of goods, accurate specification and compatibility of products, and quality control methods for production. NBS is authorized to: (1) develop, maintain, and disseminate standards of physical and chemical measurements; (2) determine the properties of physical materials; (3) develop test methods for materials, mechanisms, and structures; (4) establish standard practices in cooperation with other government agencies and the private sector;

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and (5) provide technical advisory services on a reimbursable basis to other Federal agencies. In addition to its primary responsibilities under the NBS Organic Act, NBS has responsibilities under 17 other statutes.

NBS is unique as a Federal agency in having an extremely broad mission which is relevant to nearly every national problem area and economic sector. The capabilities of NBS can be applied to a wide range of problems that affect economic development, enhanced innovation and productivity, and the use of energy and material resources. In addition, NBS has an important role in facilitating the transfer of technology between government, industry, and academia.

NATIONAL BUREAU OF STANDARDS

The administration's budget request for NBS for fiscal year 1985 totaled $126,062,000. A breakdown of that request is contained in table 1. The proposed budget for fiscal year 1985 represents an increase of $10,344,000 (9 percent) from the fiscal year 1984 appropriation of $115,718,000. The major programmatic decreases from fiscal year 1984 reflect the administration's intent to: (1) eliminate the Center for Fire Research (CFR) ($5,827,000) in fiscal year 1984); (2) eliminate the Center for Building Technology (CBT) ($3,969,000 in fiscal year 1984); (3) reduce funding for the Institute for Computer Sciences and Technology (ICST) ($5 million reduction from fiscal year 1984 level of $10 million to a fiscal year 1985 level of $5 million); (4) eliminate funding for the National Voluntary Laboratory Accreditation Program (NVLAP) ($560,000) and Measurement Assurance Programs (MAP) ($1,546,000), and concomitantly increase the user fees for these programs to cover research and development costs.

TABLE 1.—COMPARISON OF FISCAL YEAR 1985 BUDGET REQUEST WITH FISCAL YEAR 1984 FUNDS AVAILABLE FOR NATIONAL BUREAU OF STANDARDS

[Amounts in thousands]

	Fiscal year	
	1984	1985
Measurement research and standards:		
(1) Fundamental physical measurements and standards	(11,241)	(14,594)
(2) Radiation measurements and standards	(9,101)	(9,864)
(3) Analytical chemical measurements and standards	(2,601)	(2,810)
(4) Materials characterization, processing and performance	(14,801)	(17,758)
(5) Chemical properties and processes	(3,599)	(6,881)
(6) Measurement technology transfer	(6,398)	(4,612)
(7) Applied measurement program	(2,000)	(2,220)
Subtotal	49,741	58,739
Engineering measurements and standards:		
(1) Building research	(3,969)	(.....)
(2) Signals and systems metrology	(5,751)	(6,210)
(3) Chemical engineering metrology	(4,097)	(4,424)
(4) Engineering and products standards	(2,899)	(3,322)
(5) Mathematical sciences	(5,175)	(5,605)
Subtotal	21,891	19,561
Fire research subtotal	5,827	.....
Computer sciences and technology subtotal	10,000	5,000
Core measurement research for new technology subtotal	11,969	12,324
Central technical support:		
(1) Technical competence	(8,100)	(8,727)
(2) Central technical support	(8,190)	(21,711)
Subtotal	16,290	30,438
Total, National Bureau of Standards	115,718	126,062

The major programmatic increases over fiscal year 1984 reflect the administration's intent to: (1) expand research for process and quality control measurements ($2,500,000); (2) design a prototype cold neutron source for materials research ($1,500,000); (3) improve the scientific basis for industrial applications for biotechnology ($3 million); (4) procure a scientific computer for use by NBS and the National Oceanic and Atmospheric Administration ($8,874,000); and (5) replace the telephone system at the Gaithersburg site ($2 million).

In addition to a direct appropriation, NBS receives reimbursements and fees for technical advisory services and other work performed for government agencies and the private sector. Table 2 shows the estimated operating funds expected from all sources in fiscal year 1985. The total operating budget for NBS in fiscal year 1985 is expected to be $206,500,000.

TABLE 2.—TOTAL ESTIMATED NBS OPERATING FUNDS IN FISCAL YEAR 1985—ALL SOURCES

[Amounts in millions]

	STRS appropriation	Reimbursements from other Federal agencies and private sector	Total
Measurement research and standards:			
Fundamental physical measurements and standards	14.6	3.5	18.1
Radiation measurements and standards	9.9	5.8	15.7
Analytical chemical measurements and standards	2.8	5.8	8.6
Materials characterization, processing, performance	17.8	10.3	28.1
Chemical properties and processes	6.9	2.6	9.5
Measurement technology transfer	4.6	4.5	9.1
Applied measurement program	2.2	1.4	3.6
Subtotal	58.8	33.9	92.7
Engineering measurement and standards:			
Building research	.....	9.1	9.1
Signals and systems metrology	6.2	7.6	13.8
Chemical engineering metrology	4.5	5.7	10.2
Engineering and product standards	3.3	.6	3.9
Mathematical sciences	5.6	1.0	6.6
Technical reimbursable services	.....	3.6	3.6
Subtotal	19.6	27.6	47.2
Fire research subtotal	.....	3.4	3.4
Computer sciences and technology subtotal	5.0	3.5	8.5
Core measurements research for new technologies subtotal	12.3	7.9	20.2
Central technical support:			
Technical competence	8.7	.....	8.7
Capital transfer and facilities	21.7	.....	21.7
Subtotal	30.4	.....	30.4
Nontechnical support services	.....	4.1	4.1
Total, National Bureau of Standards	126.1	80.4	206.5

FINDINGS FROM THE HEARING

The Committee held a hearing March 6, 1984, on the fiscal year 1985 budget for NBS. The Director of NBS presented the administration's budget request and described the programmatic changes that such a budget would entail.

The Committee also received testimony from the chairperson of the ICST Evaluation Panel, the president of the National Conference of States on Building Codes and Standards, and representatives of pri-

vate industry. While all witnesses expressed high regard for the quality of the research performed at NBS, great concern was expressed over the administration's proposals to reduce or terminate several programs, as discussed below.

CENTER FOR FIRE RESEARCH

Fire research is conducted at NBS in the CFR, under the directive of the Federal Fire Prevention and Control Act of 1974 (Public Law 93–498). Prior to fiscal year 1983, funds for this program were passed through the U.S. Fire Administration to NBS. In fiscal year 1983, the funds were converted to a direct line-item appropriation to NBS.

The CFR does fundamental as well as applied research in areas such as combustion toxicology, flame chemistry and fire dynamics. In addition to the in-house research program, CFR funds an extramural grants program (totalling about $2 million in fiscal year 1984) to 30 universities and research institutions. The fire research program at NBS is recognized for its excellence, particularly in the mathematical modelling of fire spread.

At the 1983 hearing the consensus of testimony from the NRC Evaluation Panels for NBS, the Statutory Visiting Committee and outside witnesses, as well as from numerous private sector groups which submitted statements for the record, was that continued Federal support of the CFR is necessary because of its unique role in support of fire research and the training of fire scientists. This consensus was reaffirmed at the 1984 hearing in testimony from the National Conference of States on Building Codes and Standards.

CENTER FOR BUILDING TECHNOLOGY

The CBT, a division of the NBS National Engineering Laboratory, provides the technical basis for building standards, codes and specifications and also conducts analytical, laboratory and field research in engineering and physical sciences related to building construction. The program provides integrated, nonproprietary research data on building materials, systems and components.

The CBT research has led to improvements in Federal, State, and local codes and specifications, which have, in turn, resulted in: (1) reduced building costs; (2) improved testing and quality control of building materials and components; and (3) greater reliability and durability. In addition, the NBS responsibility under the Earthquake Hazards Reduction Act of 1977 is carried out by CBT. Direct appropriations account for about 31 percent ($3,969,000) of the total operating expenses at CBT, with the balance ($8,695,000) coming from other Federal agencies and private sources.

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY

The ICST conducts its activities under several authorities. The primary statute is the Brooks Act (Public Law 89–306) which assigns to the Secretary of Commerce the responsibility to develop and recommend uniform Federal automatic data processing (ADP) standards and to undertake necessary research in computer science and technology.

MEASUREMENT TECHNOLOGY TRANSFER PROGRAM

The Measurement Technology Transfer Programs are the primary means by which NBS transfers its developed measurement techniques, standards and data to industry, universities and governments. These programs include MAP, NVLAP, and the Standard Reference Material Program.

The MAP and NVLAP provide services to insure measurement quality in commercial and government calibration and standards laboratories. Basic measurement, statistical capabilities and transfer standards have been developed for MAPs for quantities such as mass, voltage, microwave power, and X-ray dosage.

For the NVLAP, NBS develops performance criteria, establishes examination methodology, qualifies examiners, conducts workshops, and makes recommendations for accreditation to the Secretary of Commerce. Accredited laboratories provide assurance that products, including materials, components and systems, meet the criteria stated in engineering and product standards. The MAP and the NVLAP are supported by user fees. The fiscal year 1985 budget request proposed that in fiscal year 1985 the MAP and NVLAP be converted to full cost recovery to include the costs of research and development of new products and services.

Committee Views

The administration requested a 2-year authorization, with a request for fiscal year 1986 of "such sums as may be necessary". The Committee does not believe an authorization without a specified amount is justified.

While the Committee strongly supports the importance of new initiatives at the National Bureau of Standards to expand the array of services which it offers, and to keep it current with state-of-the-art developments and innovation, the Committee does not believe that elimination or a drastic reduction of existing important programs is the appropriate approach for locating funding for these initiatives.

In developing its views, the Committee considered: statements from witnesses at the hearing of March 6, 1984, the annual reports from the National Academy of Sciences Evaluation Panels, reports of the NBS Statutory Visiting Committee, and statements and informal views expressed by many individuals in the private sector and in the academic community. On March 27, 1984, the Committee ordered to be favorably reported S. 2458, the National Bureau of Standards Authorization Act for fiscal year 1985. The bill, as reported, authorizes the appropriation of $131,643,000, plus additional sums as may be necessary for adjustments in salary, pay, retirement and other employee benefits for NBS. This sum is $5,581,000 more than was requested by the administration.

S. 2458, as reported, contains the following recommendations: The Committee has concluded that the CFR, CBT, ICST, and Measurement Technology Transfer Programs (MAP and NVLAP) perform valuable services for the Nation. In the case of the CFR and CBT, the Committee is convinced that the private sector is not prepared to assume responsibility for the services provided by the centers.

In the case of the ICST, the Committee concludes that a 50 percent cut in funding, as was proposed by the administration's budget, consisting of reductions in the areas of voluntary standards in the domestic arena, is contrary to the mandate of the NBS and to its acknowledged leading role in the area of computer network standards development.

While the Committee supports the concept of allowing NBS to charge for products and services, and to ask users to bear the costs associated with the actual delivery of products and services, the Committee believes that costs incurred by NBS for research and development of new products and services are appropriately the responsibility of NBS and should not be passed along to the users but rather, supported through NBS's direct appropriation.

The Committee has concluded that proposed new initiatives in process quality control and cold neutron research are important to the Bureau's statutory mandate and should be funded.

The Committee has included authorization of appropriations for acquisition of a consolidated advanced computing system, to be spread over a 2-year period.

The Committee has concluded that funding for the proposed new biotechnology initiative should not be provided until the NBS has developed a more comprehensive plan for the utilization of these funds. The Committee also finds that replacement of the existing telephone system at the Gaithersburg site is unnecessary and unwarranted at this time, particularly in light of the proposed drastic cuts in, or elimination of, important substantive research programs.

CENTER FOR FIRE RESEARCH

The administration has proposed the elimination of CFR. Both the testimony received at the hearing and other communications to the Committee confirm the judgment of the Committee that such a step is ill-advised and unwarranted.

The fire research program is the only Federal research effort aimed at reducing annual fire losses, particularly from residential fires. The United States continues to be among the leading nations in incidence of building fires and fire-related deaths on a per capita basis. Fires in residences account for 46 percent of the dollar losses and 77 percent of the fire-related deaths. The results of the research performed at CFR are used by designers, builders, standards committees and State and local codes officials to prevent fires, and to develop efficient fire-control practices. Through its grants program, CFR provides the link between university research and the needs of fire technology. This role is consistent with the administration's policy to support education and training in the context of federally funded research.

The private sector, either in contract research laboratories or in individual corporations, has neither the incentive nor the resources to conduct a comprehensive broad-based fire research program such as exists at the CFR.

Moreover, the Committee believes that a credible, neutral source of information such as that found in CFR is essential to protect the public interest, health and safety.

The consensus of testimony received from the NRC Evaluation Panels for NBS, the Statutory Visiting Committee and outside witnesses, as well as from numerous private sector groups which submitted statements for the record, was that continued Federal support of the CFR is necessary because of its unique role in support of fire research and the training of fire scientists. Testimony by the National Conference of States on Building Codes and Standards at the fiscal year 1985 hearing reaffirmed the importance of the CFR's work in fire research, and the inability of the States to carry out this research if the CFR were terminated.

The Committee does, however, urge that the NBS implement the recommendations of the Evaluation Panel with regard to the importance of active and effective liaison and communication between the CFR and fire service organizations.

CENTER FOR BUILDING TECHNOLOGY

The administration has also proposed the elimination of CBT. Numerous communications to the Committee confirm the judgment of the Committee that such a step is ill-advised and undesirable. The building research program at CBT is in much the same situation as the CFR. The construction industry is highly disaggregated. Few of the companies are equipped to conduct comprehensive or integrated research dealing with structural engineering, building materials, building equipment or systems. Most of the work that is carried out in industry is proprietary in nature, and the effort tends to focus on new product development and does not address the diverse technical problems of the building community. Several industries and Federal agencies fund generic research at CBT which is oriented toward performance and evaluation, precisely because of the high-quality technical expertise and unique experimental facilities available nowhere else. CBT also provides nonproprietary information for use by building code officials in revising codes and determining compliance.

The Committee is not convinced that the private sector could or would assume the role of carrying out primary research in the building sciences. Testimony at the hearing by the National Conference of States on Building Codes and Standards confirmed that the States do not have the resources to take over responsibility for the research performed at the CBT. The Committee believes that the research performed at CBT is vital to public health and safety, and is worthy of continued support.

The Committee intends that NBSS fund CBT at the fiscal year 1984 appropriation level. Moreover, funding for CBT should not be at the expense of other essential programs in NBS. The Committee bill provides funding for CBT at a level equivalent to the fiscal year 1984 appropriation level.

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY

The administration proposed a budget reduction of 50 percent ($5 million) for ICST. Both the testimony received at the hearing and other communications to the Committee confirm the judgment of the

Committee that it is in the national interest for the Federal Government to conduct research, and develop policies and standards for the rapidly growing field of information processing, and, as a result of these activities, to promote and strengthen the international competitiveness of the U.S. computer, telecommunications and data processing industries.

The functions of ICST in ADP standards setting and in technical assistance to other Federal agencies have resulted in substantial savings to the Government. The Federal Government spent an estimated $10 billion in fiscal year 1982 on ADP. The work of ICST has led to increased compatibility of equipment and software from different vendors and to increased productivity and reliability of software and hardware through conversion of older programs, data and systems into new forms.

The Committee believes that the work performed by ICST is timely and appropriate. The Committee disagrees with the administration's view that these activities are more appropriate to the private sector. In fact, ICST already interacts very effectively with the private sector through the American National Standards Institute (ANSI) and is the only U.S. entity recognized by the International Standards Organization (ISO). ICST acts as a catalyst in the development of voluntary standards and neither intrudes on the province of industry nor performs any regulatory function.

The evaluation panel considers ICST a leader in many fields of computer science, particularly in network interface protocols and data encryption. The evaluation panel as well as representatives of the private sector (computer and communications equipment manufacturers and user industries) consider ICST an essential part of the process and development of voluntary computer standards, both nationally and internationally.

The Committee believes that the proposed reduction of 50 percent would have a drastic effect on both the technical programs of ICST and on ICT's ability to participate in vital domestic and international standards activities. The Committee bill, as reported. restores funding for ICST at fiscal year 1984 authorization levels.

The Committee reiterates its belief that substantially more attention to the education and clearinghouse function of ICST would be appropriate. The Committee believes the need for such an educational activity for use by both government agencies and the private sector continues to be substantial, and that ICST is uniquely positioned within the existing governmental structure to perform this function. The Committee agrees with the evaluation panel that the effectiveness of meeting the mandate of the Brooks Act could be greatly increased with an appropriate, well-directed effort in this area.

MEASUREMENT TECHNOLOGY TRANSFER

The administration has proposed that the MAP and the NVLAP be converted to full cost-recovery in fiscal year 1985, including cost-recovery for research and development. These programs are vital to the Bureau's ability to transfer its developed standards and products to the private sector.

Testimony at the hearing on March 6, 1984, indicated that the MAP program offers a new approach to making accessible the standards needed to ensure the quality of U.S. manufactured goods. Statements for the record and testimony at the hearing indicated that the NVLAP program plays an important role in overcoming such non-tariff barriers as the requirement by some countries that products be qualified by an accredited laboratory before introduction into their markets.

The Committee believes that those costs associated with the actual delivery of products and services should be borne by the users. But the Committee reiterates its position that costs incurred by NBS for research and development of new products and services are appropriately the responsibility of NBS and should not be passed along to the users but, rather, supported through NBS's direct appropriation.

The Committee agrees with the evaluation panel's assessment that a sudden large increase in prices to provide total R&D cost recovery would be devastating to the MAP, and would cripple the national measurement system.

PROCESS QUALITY CONTROL

The administration has proposed funding for development of advanced primary standards, and measurement methods ($2,500,000). The Committee believes that process quality control is perhaps the most fundamental service which the NBS offers to industry, because it involves the measurement base at NBS. The NBS has identified certain areas on which it will focus initially: Electrical and electronic measurement and standards, optical radiation standards, ionizing radiation and dosimetry standards, and vacuum and leak rate standards.

This initiative will enable NBS to expand present measurement capabilities, establish standards for quality control in new measurement areas, and provide data to industry for development of guidelines and voluntary standards. The Committee has included funding for this initiative because it believes that process quality control is a fundamental part of the services offered by NBS.

COLD NEUTRON SOURCE

The administration has proposed funding for construction of a cold neutron source facility for advanced nondestructive materials research. The funds requested in fiscal year 1985 ($1,500,000) would be used for construction of an improved, full-scale cold source at the NBS' existing research reactor. Initial experiments would be conducted using two prototype instruments.

The United States lags far behind other industrialized nations, particularly Great Britain, France and Germany, in the development of cold neutron research facilities, and in the research which such a facility would enable the United States to perform. Although the ultimate cost of the facilities would be approximately $23 million, the start of the initiative at $1,500,000 would enable initial experimentation to begin.

The facility at NBS is already compatible with installation of a cold source of sufficient volume for the development of the flexible array of instruments needed to give the U.S. research community a capability competitive with the rest of the world. The proposed cold neutron source will be managed and operated as the National Research Facility for industrial, university and Government scientists. Time on the cold neutron research facility will be available to all U.S. users, on the basis of allocation by an advisory committee. The Committee has included funding for this initiative because of its importance in bringing the United States up to world standards in the area of cold neutron research and because of the suitability of the NBS site.

BIOTECHNOLOGY

The administration has proposed funding for an initiative in biotechnology ($3 million) to develop a scientific basis for the use of biotechnology in chemical production and related industries. The proposal by the NBS would provide the generic data base and models needed by industry to develop process optimization strategies, tailor reaction conditions and understand generally the major chemical problems in the biotechnology field.

The importance of the biotechnology industry world-wide has been well documented. In the past decade, the commercial potential for directing the cellular machinery for the development of new and improved products and processes in a wide diversity of industrial sectors has been increasingly exploited. Currently the United States leads the world in both basic science and commercial development of new biotechnology, but Japan, West Germany, the United Kingdom, Switzerland, and France have targeted biotechnology as an area for economic growth.

The Committee believes, consistent with its directives of prior years, that the Bureau should develop an effective program in biotechnology, relevant to the needs of the industry. However, the Committee is concerned that the current proposal has not been adequately designed to ensure that it address the needs of industry, nor to ensure that it focus on the most important areas of research in measurement and standards in the biotechnology area.

The Committee, therefore, has not included funding for the biotechnology initiative at this time. The Committee directs the Bureau of Standards to reevaluate the appropriate use of funding in developments and standards for the biotechnology industry and related industries. The Committee directs the Bureau of Standards to report to the Committee by the end of calendar year 1984 with a plan on a national effort in measurements and standards for biotechnology, to be located at the NBS.

ADVANCED COMPUTING SYSTEMS

The administration has proposed funding for the procurement and installation at the Bureau of Standards of a class VI supercomputer and associated equipment to provide joint supercomputing capability

for the NBS and the NOAA Environmental Research Laboratory. The advanced computing capability will enhance NBS's ability to pursue long range solutions of important problems in such areas as atomic and molecular properties, radiation transport, electronics, materials, chemical processing, biotechnology, computer aided design/computer aided manufacturing, robotics, and automation, as well as the Environmental Research Laboratory's research into problems in the areas of aeronomy, wave propagation, severe storms and marine environment.

The Committee is convinced of the importance of advanced computing facilities to the Bureau's role as a leader in measurements and standards. The Committee has investigated thoroughly the advisability of purchase of a class VI supercomputer, and believes that the Bureau will be able to achieve full utilization of such facilities. However, the Committee believes that it is unlikely that procurement will be completed in fiscal year 1985 and for that reason has included funding for this request at one-half of that which was requested by the administration, with the intention of funding the remainder during fiscal year 1986.

BUDGET PRESENTATION

The Committee notes that, as in prior years, the NBS budget has been presented to the Committee in a format that is not conducive to a clear understanding of the Bureau's organizational arrangements, allocation of overhead costs, and funding of specific initiatives. The Committee directs the National Bureau of Standards to develop for fiscal year 1986 a format for its budget preparation which is well-organized, indexed, and clearly documents, in narrative fashion, the allocation of overhead costs.

OFFICE OF PRODUCTIVITY, TECHNOLOGY, AND INNOVATION

The primary goal of Office of Productivity, Technology, and Innovation (OPTI) is to stimulate increased technological innovation and productivity in the private sector. OPTI serves as the focal point, and as a catalyst, for the development of policies and cooperative activities between government, universities and industry in a variety of areas that influence industrial innovation and productivity. In addition, OPTI coordinates Federal patent policy, the voluntary conversion to the metric system and the implementation of the Stevenson-Wydler Technology Innovation Act (Public Law 96–480).

In fiscal year 1985, the administration requested $3,371,000 for OPTI activities. The Committee bill agrees with the requested amount.

Estimated Costs

In accordance with paragraph 11(a) of the rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, D.C., April 4, 1984.

Hon. BOB PACKWOOD,
Chairman, Committee on Commerce, Science and Transportation, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the attached cost estimate for S. 2458, the National Bureau of Standards Authorization Act for fiscal year 1985.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

RUDOLPH G. PENNER, *Director.*

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

APRIL 4, 1984.

1. Bill number: S. 2458.

2. Bill title: National Bureau of Standards Authorization Act for fiscal year 1985.

3. Bill status: As ordered reported by the Senate Committee on Commerce, Science, and Transportation, March 27, 1984.

4. Bill purpose: S. 2458 authorizes the appropriation of $131.6 million in fiscal year 1985, plus such additional sums as may be necessary for adjustments in salary, pay, retirement and other employee benefits, for the activities of the National Bureau of Standards (NBS). In addition, the bill authorizes the appropriation of $3.4 million in 1985 for the Office of Productivity, Technology and Innovation (OPTI), and $0.6 million in 1985 for expenses incurred abroad to be paid in foreign currency. The bill would also allow NBS to adjust fees for certain goods and services to cover estimated replacement costs.

Fiscal year 1984 appropriations to date for the activities authorized by the bill are $120.0 million. The President's 1985 budget requests $130.0 million, including $5.2 million for transfer for working capital, for these programs.

5. Estimated cost to the Federal Government:

[By fiscal years, in millions of dollars]

	1985	1986	1987	1988	1989
Authorization level:					
Specified (Function 370)	135.6	.....	.....	.....	.....
Estimated (Function 920)	2.5	.....	.....	.....	.....
Total	138.1	.....	.....	.....	.....
Estimated outlays:					
Function 370	90.5	40.8	4.3	.....	
Function 920	2.2	.3	.....	.....	.....
Total	92.7	41.1	4.3	.....	.....

S. 2458 would allow NBS to increase fees for certain reference and calibration services to recover replacement costs. NBS would be allowed to use these fees to replace inventories; any amounts collected in excess

of replacement costs would be returned to the Treasury. According to NBS, additional fee collections of approximately $250,000 annually could be collected as a result of this provision, to be used for replacing inventories.

Basis of estimate: For purposes of this estimate it was assumed that the amounts authorized in the bill for 1985 would be appropriated prior to the beginning of the fiscal year. In addition, pay and other benefit increases of approximately $2.5 million in 1985 were estimated based on CBO's baseline projections. Outlays reflect historical spending patterns.

6. Estimated cost to State and local governments: None.

7. Estimate comparison: None.

8. Previous CBO estimate: On March 28, 1984, CBO prepared a cost estimate for H.R. 5172, as ordered reported by the House Committee on Science and Technology, March 27, 1984. The estimated 1985 authorization level in H.R. 5172 for the same programs authorized in S. 2458 was $140.5 million; estimated outlays were $94.3 million in 1985, $41.8 million in 1986, and $4.4 million in 1987.

9. Estimate prepared by: Mary Maginniss.

10. Estimate approved by: James L. Blum, Assistant Director for Budget Analysis.

Regulatory Impact Statement

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation:

The bill, as reported, provides authorization of appropriations to the Secretary of Commerce to carry out programs of NBS, including certain special statutory programs in fiscal year 1985.

The bill does not regulate business activity, or any private activity. The Committee concludes, therefore, that the implementation of this bill will have no impact on the personal privacy of any individual or business. No records will be required to be kept by any individual or business, nor will any reports need to be filed as a result of the enactment of S. 2458.

Section-by-Section Analysis

SECTION 1

Cites the short title as the "National Bureau of Standards Authorization Act for Fiscal Year 1985".

SECTION 2

Authorizes appropriations totalling $131,643,000 for fiscal year 1985 for the programs of the NBS.

SECTION 3

Authorizes appropriations of $600,000 for foreign currency expenses incurred outside the United States.

SECTION 4

Authorizes appropriations of $3,371,000 for the Office of Productivity, Technology, and Innovation.

SECTION 5

Authorizes appropriations of such sums as may be necessary for adjustments in salary, pay, retirement, and other employee benefits.

SECTION 6

Makes appropriations available for the period or periods specified in the acts making such appropriations.

SECTION 7

Amends section 12(f) of the National Bureau of Standards Organic Act of 1901 (15 U.S.C. 278b(f)) to:

1. Allow NBS to retain proceeds from fee increases for goods and services; and
2. Allow NBS to use this net income from goods and services provided to industry and other Federal agencies to replace equipment and inventories before net proceeds are paid into the general fund of the Treasury.

SECTION 8

Amends section 5 of the National Bureau of Standards Organic Act of 1901 (15 U.S.C. 274) to change the level of the Director of the Bureau to Level IV of the Executive Schedule.

Changes in Existing Law

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

The Act of March 3, 1901

Section 5 of that Act

Sec. 5. The director shall be appointed by the President, by and with the advice and consent of the Senate. He shall have the general supervision of the bureau, its equipment, and the exercise of its functions. He shall make an annual report to the Secretary of the Treasury, including an abstract of the work done during the year and a financial statement. He may issue, when necessary, bulletins for public distribution, containing such information as may be of value to the public or facilitate the bureau in the exercise of its functions. *The director shall be compensated at the rate now or hereafter in effect for level IV of the Executive Schedule, pursuant to section 5315 of title 5, United States Code.*

Section 12 of that Act

SEC. 12. (a)–(e) * * *

(f) The amount of any earned net income resulting from the operation of the fund at the close of each fiscal year shall be paid into the general fund of the Treasury: *Provided*, That such earned net income may be applied [first] to restore any prior impairment of the fund, *and to ensure the availability of working capital necessary to replace equipment and inventories.*

TITLE 5, UNITED STATES CODE

Section 5315 of that Title

§ 5315. Positions at level IV

Level IV of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

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Inspector General, Department of Defense.

Director, National Bureau of Standards, Department of Commerce.

Section 5316 of that Title

§ 5316. Positions at level V

Level V of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

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Director, Geological Survey, Department of the Interior.

[Director, National Bureau of Standards, Department of Commerce.]

Director of Science and Education, Department of Agriculture.

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